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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/556,824	04/21/2000	Hiroyuki Ogawa	SUD-115-USAP	6405
7590	02/10/2004		EXAMINER KIM, CHONG R	
Snider & Associates Ronald R Snider P O Box 27613 Washington, DC 20037-7613			ART UNIT 2623	PAPER NUMBER 11
DATE MAILED: 02/10/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/556,824

Applicant(s)

OGAWA, HIROYUKI

Examiner

Charles Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Supplementary Action

1. This action is in response to the After-Final submissions received on December 11, 2003. Applicants argue (page 2) that they have “shown priority at a date prior to August 17, 1999, the date of the filing of King ‘396”, and “For this reason, the King reference cannot be applied against Applicant’s claims”. The Examiner disagrees. The Examiner notes that King et al., U.S. Patent No. 6,122,396 is a continuation-in part of application No. 08/767,023 filed on December 16, 1996. The Examiner notes that the earliest effective filing date for the King reference is considered to be December 16, 1996, since the relevant citations in the King reference used to reject the claims are supported in the ‘023 application. Therefore, the rejections in the previous office action are maintained and considered proper.

The Examiner notes that the shortened statutory period for reply has been reset, and therefore expires THREE MONTHS from the mailing date of this action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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2. Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by King et al., U.S. Patent No. 6,122,396 ("King").

Referring to claim 2, King discloses a method for detecting the presence of microorganisms in a sample, comprising the steps of:

- a. preparing a light-permeable microorganism colony culture medium mixed with a sample (col. 5, lines 24-64)
- b. illuminating the medium with a coherent laser beam (col. 6, lines 31-36)
- c. receiving the light projection generated by the medium with an image sensor, the presence of microorganisms being detected by analyzing the projected image data obtained by the image sensor (col. 6, line 31-col. 7, line 17).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of King et al., U.S. Patent No. 6,122,396 ("King"), and Jaggi et al., U.S. Patent No. 4,845,552 ("Jaggi").

Referring to claim 3, King discloses a projection detecting system comprising:

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- a. a loading portion of a transparent non-flowing cell container (slide) which contains a microorganism colony under observation (col. 6, lines 11-14)
- b. a coherent laser beam emitting source which illuminates the object placed on the loading portion (col. 6, lines 31-36)
- c. an image sensor which is arranged to receive the light projection generated by the object illuminated by the laser beam and providing the projected image data corresponding to the received light (col. 6, line 31-col. 7, line 17).

King fails to explicitly state that the image sensor is an array of light sensitive detectors. However, image sensors comprised of an array of light sensitive detectors were exceedingly well known in the art. For example, Jaggi teaches an image sensor with an array of light sensitive detectors for detecting a coherent laser beam that has been illuminated on a microscopic object (col. 3, lines 63-66 and col. 4, lines 63-67).

King and Jaggi are both concerned with detecting microscopic objects utilizing a laser light source and an image sensor. Jaggi's system provides a high resolution image with minimum deterioration (Jaggi, col. 2, lines 55-59). Therefore, it would have been obvious to modify the image sensor of King so that it is comprised of an array of light sensitive detectors, as taught by Jaggi, in order to enhance the detection of microorganisms by analyzing a high resolution projected image.

Referring to claim 4, see the rejection of at least claim 3 above. King further discloses:

- a. a multiple loading portion capable of accommodating many of said transparent non-flowing cell containers under observation in a row (col. 6, lines 8-28)

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b. a coherent laser beam emitting source which illuminates through the transparent non-flowing cell containers placed on the loading portion (col. 6, lines 31-36)

c. an image sensor arranged to receive the compounded light projection generated by the transparent non-flowing cell containers illuminated by the laser beam and providing the projected image data corresponding the received light (col. 16, lines 10-18).

King fails to explicitly state that the image sensor is an array of light sensitive detectors. However, image sensors comprised of an array of light sensitive detectors were exceedingly well known in the art. For example, Jaggi teaches an image sensor with an array of light sensitive detectors for detecting a coherent laser beam that has been illuminated on a microscopic object (col. 3, lines 63-66 and col. 4, lines 63-67). Therefore, it would have been obvious to modify the image sensor of King so that it is comprised of an array of light sensitive detectors, as taught by Jaggi, for the reasons stated above.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of King et al., U.S. Patent No. 6,122,396 ("King"), and Jaggi et al., U.S. Patent No. 4,845,552 ("Jaggi"), further in view of Hirschfeld, U.S. Patent No. 3,819,270 ("Hirschfeld").

Referring to claim 5, the combination of King and Jaggi fail to teach three coherent laser beam sources and three image sensors.

Hirschfeld discloses three coherent light beam sources which illuminate an object from X, Y, and Z directions which are perpendicular to each other (col. 9, lines 20-25. Note that the "three corresponding light beams along mutually orthogonal paths" in lines 23-24 is interpreted to mean that the beams are in the X, Y, and Z directions that are perpendicular to each other),

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and three image sensors which are an array of light sensitive detectors, arranged to receive the light projection generated by the object illuminated by the light beams from the X, Y, and Z directions and providing the projected image data corresponding to each detector as X, Y, and Z image data (col. 9, lines 26-38).

King, Jaggi, and Hirschfeld are all concerned with projection detection systems for detecting microscopic objects. Hirschfeld's system provides accurate measurements by minimizing orientation effects (Hirschfeld, col. 9, lines 11-13). Therefore, it would have been obvious to modify the system of King and Jaggi, to include three laser beam sources and three image sensors as taught by Hirschfeld, in order to improve the detection process by analyzing an accurate image.

5. Claim 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of King et al., U.S. Patent No. 6,122,396 ("King"), and Jaggi et al., U.S. Patent No. 4,845,552 ("Jaggi"), in view of Schembri et al., U.S. Patent No. 6,518,056 ("Schembri"), further in view of Hirschfeld, U.S. Patent No. 3,819,270 ("Hirschfeld").

Referring to claim 6, the combination of King and Jaggi teach a loading portion which holds an object under observation (as noted above), but fail to disclose that the loading portion is capable of rotating the object with a constant angular velocity around a center axis that passes through the center of the object. However, loading portions capable of rotating an object with constant angular velocity were exceedingly well known in the art. For example, Schembri discloses a loading portion which holds an object under observation and is capable of rotating

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the object with a constant angular velocity around a center axis that passes through the center of the object (col. 13, lines 40-50).

King, Jaggi, and Schembri are all concerned with projection detection systems for detecting microscopic biologic objects. Schembri provides a compact and inexpensive system that increases efficiency and facilitates the detection process by avoiding the risk of detector overload found in conventional scanners (Schembri, col. 5, lines 22-31). Therefore, it would have been obvious to modify the system of King and Jaggi, so that the loading portion is capable of rotating an object with constant angular velocity, as taught by Schembri, in order to enhance the detection process.

King, Jaggi, and Schembri all fail to teach that the laser beam emitting source illuminates from the direction perpendicular to the axis of rotation.

Hirschfeld discloses three coherent light beam sources which illuminate an object from X, Y, and Z directions which are perpendicular to each other (col. 9, lines 20-25. Note that the "three corresponding light beams along mutually orthogonal paths" in lines 23-24 is interpreted to mean that the beams are in the X, Y, and Z directions that are perpendicular to each other). Note that two of the light sources taught by Hirschfeld will illuminate the object from a direction perpendicular to the axis of rotation. For example, if the axis of rotation was in the X direction, the light sources that illuminate from the Y and Z directions will illuminate the object from a direction perpendicular to the axis of rotation.

King, Jaggi, Schembri, and Hirschfeld are all concerned with projection detection systems for detecting microscopic biologic objects. Hirschfeld's system provides accurate measurements by minimizing orientation effects (Hirschfeld, col. 9, lines 11-13). Therefore, it

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would have been obvious to modify the system of King, Jaggi, and Schembri, so that the light source illuminates from the direction perpendicular to the axis of rotation, as taught by Hirschfeld, in order to obtain an accurate image analysis.

Referring to claim 7, King further discloses that the object is a transparent cell container (slide) which contains a microorganism colony (col. 6, lines 11-14).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 703-306-4038. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.



ck

February 9, 2004



AMELIA M. AU
SUPERVISORY PATENT EXAMINER
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